CLAIMS

1. A through-bolt for use in combination with an electrical AC generator having a housing including a drive-end portion and a mounting-end portion, a stator mountable between said drive-end and mounting-end portions, and a rotor mounted for rotation within said housing, one of said end portions including a plurality of circumferentially spaced ears having first apertures therein and the other of said end portions including a corresponding plurality of circumferentially spaced ears having threaded apertures therein whereby a through-bolt is inserted through one of said first apertures and received in one of said threaded apertures to bolt said housing ends together against said stator, whereby the through-bolt is subject to bending stress since it does not operate on a solid stack up, regardless of alignment, said through-bolt comprising:

a head portion;

an elongated shank portion; and

a threaded portion extending from said elongated shank portion;

said shank portion being necked-down adjacent said threaded portion to a diameter sufficiently less than a minor diameter of threads in said threaded portion such that the resistance of said through-bolt to fatigue failure is increased.

2. A through-bolt as in claim 1 wherein said elongated shank portion includes two or more spaced necked-down portions.

3. A through-bolt as in claim 1 wherein said elongated shank portion is necked-down generally from said head portion to said threaded portion.

4. A through-bolt as in claim 1 wherein said necked-down feature is rolled into said through-bolt.

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5. An electrical AC generator having a housing including a drive-end portion and a mounting-end portion, a stator mountable between said drive-end and mounting-end portions, and a rotor mounted for rotation within said housing, one of said end portions including a plurality of circumferentially spaced ears having first apertures therein and the other of said end portions including a corresponding plurality of circumferentially spaced ears having threaded apertures therein whereby a through-bolt is inserted through one of said first apertures and received in one of said threaded apertures to bolt said housing ends together against said stator, whereby the through-bolt is subject to bending stress since it does not operate on a solid stack up, regardless of alignment, said through-bolt comprising:

a head portion;

an elongated shank portion; and

a threaded portion extending from said elongated shank portion;

said shank portion being necked-down adjacent said threaded portion to a diameter sufficiently less than a minor diameter of threads in said threaded portion such that the resistance of said through-bolt to fatigue failure is increased.

6. An AC generator as in claim 5 wherein said elongated shank portion includes two or more spaced necked-down portions.

7. An AC generator as in claim 5 wherein said elongated shank portion is necked-down generally from said head portion to said threaded portion.

8. An AC generator as in claim 5 wherein said necked-down feature is rolled into said through-bolt.